

We Claim:

1. A method in an email processing assembly having a mail server, processors,
5 processor engines for processing an email into formats suitable for the
recipient and storage means associated therewith for the distribution of an
email to an intended recipient in a predetermined format suitable for the
recipient, the email having a message and an initial header comprising email
10 data comprising: routing data including originating data, address data
identifying the intended recipient; constituent data indicating the nature of the
email; and content data comprising reference to the components of the email
message itself, the email being received in a mail server in which the following
steps were carried out, prior to receiving the email, to prepare the processing
15 assembly to carry out the method:-
- storing in a recipients database the formats suitable for each recipient
as processing requirements;
- storing in an instruction list database the instructions necessary to
20 route the email through the various processing engines;
- storing in a management rules database data specifying the manner in
which the email will be processed and distributed and comprising, on
an email being received:
- 25 taking the initial header;
- searching the management rules database;
- 30 retrieving appropriate rules having regard to the initial header;
- adding the rules to the initial header to form a system header;
- retrieving the processing requirements for the recipients;

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adding the processing requirements to the system header;

carrying out any necessary processing of the email having regard to
the system header; and

distributing the email having regard to the system header.

2. A method as claimed in claim 1, in which initially there is provided:-

a classification database comprising a plurality of classifications of
emails having regard to their attributes; and

at least one processing route with suitable processing instructions
associated therewith allocated to each classification to provide a
classification instruction list.

3. A method as claimed in claim 2, in which on receiving the email, the email is
classified having regard to those attributes which can be ascertained from the
header and the email message itself and the classification is added to the
system header to control the manner in which the necessary processing
requirements are carried out.

4. A method as claimed in claim 2, in which on receiving an email, the email is
classified having regard to those attributes which can be ascertained from the
header and the email message itself and if the full attributes of the email
cannot be ascertained, an interim classification is allocated to identify the
necessary processing requirements to ascertain the attributes of the email, the
interim classification is added to the system header, the necessary processing
is carried out having regard to the interim classification, the email is re-
classified having regard to the attributes which can now be ascertained from
the header and the email and the new classification is added to provide the
system header and thus those necessary processing requirements.

5. A method as claimed in claim 1, in which on receiving an email, the email is classified having regard to those attributes which can be ascertained from the header and the email message itself and if the full attributes of the email cannot be ascertained to provide a full system header:-

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an interim classification is allocated to identify the necessary processing requirements to ascertain the attributes of the email;

the interim classification is added to the system header;

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the necessary processing is carried out having regard to the interim classification;

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the email is re-classified having regard to the attributes which can now be ascertained from the header and the email;

the classification is added to the initial header; and

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the management rules database is then searched and the system header is provided.

6. A method as claimed in claim 2, in which on an email being received:-

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the email is accepted from the mail server;

the email is copied to a mail store memory;

the email is immediately transmitted in accordance with the header;

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the method is carried out by retrieving the stored email from the mail store memory and the email is distributed in accordance with the method including substituting, where necessary, this email for the original email transmitted.

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7. A method as claimed in claim 2, comprising:-

accepting the email from the mail server in a mail store memory;

5 allocating the system header;

storing the email message with the system header in at least one
unique location in a mail store database and then carrying out any
necessary processing of the email;

10 reading the system header;

retrieving the appropriate instruction from the classification database;

15 sending an instruction to carry out the operation on the message;

retrieving the message from the mail store database;

20 carrying out the operation on the message;

entering a record of the completion of the instruction in the header to
provide a revised system header;

25 storing the email in the mail store; and

reading the revised system header and if the email is suitable for
sending to the intended recipient, transmitting the email in accordance
with the routing data in the system header.

30 8. A method as claimed in claim 2, in which the classification is chosen from one
or more of:-

single recipient with no attachment,

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single recipient with multiple attachments,

single recipient with compressed attachments,

5 single recipient with encrypted attachments,

multiple recipients with no attachments,

10 multiple recipients with multiple attachments,

multiple recipients with compressed attachments,

multiple recipients with encrypted attachments,

15 the size of the email message,

the size of any attachments,

known encryption algorithm;

20 externally originating email;

internally originating email, and

25 urgency marking.

9. A method as claimed in claim 2, in which when the classification allocated to
an email requires the carrying out of more than one instruction, the instructions
are carried out in a predetermined order, the system header being updated
30 each time an instruction is carried out to provide a new system header.

10. A method as claimed in claim 2, in which, on carrying out the instruction or
the last of the instructions, the email is not suitable for sending:

the header is read again;

a new classification is allocated to the email;

5 a new system header is prepared from the new classification and the routing data; and

then the operations required by the new system header are carried out.

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11. A method as claimed in claim 2, in which, on retrieving the instruction from the classification instruction list:-

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the instruction is stored in a processors routing database as a queue for a processor engine chosen to carry out the operation in response to the instruction;

the processor engine accesses the instruction;

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the message is retrieved from the mail store database;

the processor engine carries out the operation on the message; and

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the revised system header is returned to the routing database for further routing of the email.

12. A method as claimed in claim 2, in which the preparation of the system header includes allocating a priority to the email.

- 30 13. A method as claimed in claim 2, in which, on an instruction requiring a specific operation to be carried out for which there is more than one processor or more than a number of processors capable of carrying out the instruction, the header is read and optimum choice of the processors is made.

14. A method as claimed in claim 2, in which:-

there is provided a processor resource database in which is contained
all the processor engines for carrying out a particular instruction listed
singly and in combination as individual processor engines;

a system resource usage is listed for each processor engine;

a processing time for the instruction to be carried out is listed for each
processor engine; and

on an instruction requiring a specific operation to be carried out for
which there is more than one processor engine or more than a number
of processor engines capable of carrying out the instruction, the
header is read and optimum choice of the processors is made.

15. A method as claimed in claim 2, in which on transmitting the email, the
identifier of the sender is stored together with the instructions carried out for
transmittal between sender and recipient and on the subsequent sending of an
email to the original sender, the instructions are retrieved and used to reformat
the outgoing email for ease of receipt by the original sender.

16. A method as claimed in claim 1, in which on an email being received:-

the email is accepted from the mail server;

the email is copied to a mail store memory;

the email is immediately transmitted in accordance with the header;

the method is carried out by retrieving the stored email from the mail
store memory and the email is distributed in accordance with the
method including substituting, where necessary, this email for the
original email transmitted.

17. A method as claimed in claim 16, in which on receiving the email, the email is classified having regard to those attributes which can be ascertained from the header and the email message itself and the classification is added to the system header to control the manner in which the necessary processing requirements are carried out.

18. A method as claimed in claim 16, in which on receiving an email, the email is classified having regard to those attributes which can be ascertained from the header and the email message itself and if the full attributes of the email cannot be ascertained, an interim classification is allocated to identify the necessary processing requirements to ascertain the attributes of the email, the interim classification is added to the system header, the necessary processing is carried out having regard to the interim classification, the email is re-classified having regard to the attributes which can now be ascertained from the header and the email and the new classification is added to provide the system header and thus those necessary processing requirements.

19. A method as claimed in claim 16, in which on receiving an email, the email is classified having regard to those attributes which can be ascertained from the header and the email message itself and if the full attributes of the email cannot be ascertained to provide a full system header: -

an interim classification is allocated to identify the necessary processing requirements to ascertain the attributes of the email;

the interim classification is added to the system header;

the necessary processing is carried out having regard to the interim classification;

the email is re-classified having regard to the attributes which can now be ascertained from the header and the email;

the classification is added to the initial header; and

the management rules database is then searched and the system header is provided.

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20. A method as claimed in claim 16, in which on an email being received:-

the email is accepted from the mail server;

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the email is copied to a mail store memory;

the email is immediately transmitted in accordance with the header;

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the method is carried out by retrieving the stored email from the mail store memory and the email is distributed in accordance with the method including substituting, where necessary, this email for the original email transmitted.

21. A method as claimed in claim 16, in which initially there is provided:-

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a classification database comprising a plurality of classifications of emails having regard to their attributes; and

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at least one processing route with suitable processing instructions associated therewith allocated to each classification to provide a classification instruction list.

22. A method as claimed in claim 16, comprising:-

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accepting the email from the mail server in a mail store memory;

allocating the system header;

storing the email message with the system header in at least one

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unique location in a mail store database and then carrying out any necessary processing of the email;

reading the system header;

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retrieving the appropriate instruction from the classification database;

sending an instruction to carry out the operation on the message;

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retrieving the message from the mail store database;

carrying out the operation on the message;

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entering a record of the completion of the instruction in the header to provide a revised system header;

storing the email in the mail store; and

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reading the revised system header and if the email is suitable for sending to the intended recipient, transmitting the email in accordance with the routing data in the system header.

23. A method as claimed in claim 16, in which when the classification allocated to an email requires the carrying out of more than one instruction, the instructions
- 25 are carried out in a predetermined order, the system header being updated each time an instruction is carried out to provide a new system header.

24. A method as claimed in claim 16, in which, on carrying out the instruction or the last of the instructions, the email is not suitable for sending:

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the header is read again;

a new classification is allocated to the email;

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a new system header is prepared from the new classification and the routing data; and

then the operations required by the new system header are carried out.

25. A method as claimed in claim 16, in which initially there is provided:-

a classification database comprising a plurality of classifications of emails having regard to their attributes; and

at least one processing operation with suitable processing instructions associated therewith allocated to each classification to provide a classification instruction list and in which on retrieving the instruction from the classification instruction list:-

the instruction is stored in a processors routing database as a queue for a processor engine chosen to carry out the operation in response to the instruction;

the processor engine accesses the instruction;

the message is retrieved from the mail store database;

the processor engine carries out the operation on the message; and

the revised system header is returned to the routing database for further routing of the email.

26. A method as claimed in claim 16, in which the preparation of the system header includes allocating a priority to the email.

27. A method as claimed in claim 16, in which, on an instruction requiring a

specific operation to be carried out for which there is more than one processor or more than a number of processors capable of carrying out the instruction, the header is read and optimum choice of the processors is made.

5 28. A method as claimed in claim 16, in which:-

there is provided a processor resource database in which is contained all the processor engines for carrying out a particular instruction listed singly and in combination as individual processor engines;

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a system resource usage is listed for each processor engine;

a processing time for the instruction to be carried out is listed for each processor engine; and

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on an instruction requiring a specific operation to be carried out for which there is more than one processor engine or more than a number of processor engines capable of carrying out the instruction, the header is read and optimum choice of the processors is made.

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29. A method as claimed in claim 16, in which on transmitting the email, the identifier of the sender is stored together with the instructions carried out for transmittal between sender and recipient and on the subsequent sending of an email to the original sender, the instructions are retrieved and used to reformat the outgoing email for ease of receipt by the original sender.

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30. A method as claimed in claim 1, in which on receiving the email, the email is classified having regard to those attributes which can be ascertained from the header and the email message itself and the classification is added to the system header to control the manner in which the necessary processing requirements are carried out.

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31. A method as claimed in claim 30, in which on an email being received:-

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the method is carried out by retrieving the stored email from the mail store memory and the email is distributed in accordance with the method including substituting, where necessary, this email for the original email transmitted.

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33. A method as claimed in claim 30, comprising:-

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reading the system header;

retrieving the appropriate instruction from the classification database;

sending an instruction to carry out the operation on the message;

retrieving the message from the mail store database;

5 carrying out the operation on the message;

entering a record of the completion of the instruction in the header to
provide a revised system header;

10 storing the email in the mail store; and

reading the revised system header and if the email is suitable for
sending to the intended recipient, transmitting the email in accordance
with the routing data in the system header.

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34. A method as claimed in claim 30, in which the classification is chosen from
one or more of:-

single recipient with no attachment,

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single recipient with multiple attachments,

single recipient with compressed attachments,

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single recipient with encrypted attachments,

multiple recipients with no attachments,

multiple recipients with multiple attachments,

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multiple recipients with compressed attachments,

multiple recipients with encrypted attachments,

the size of the email message,

the size of any attachments,

5 known encryption algorithm;

externally originating email;

10 internally originating email, and

urgency marking.

35. A method as claimed in claim 30, in which when the classification allocated to
15 an email requires the carrying out of more than one instruction, the instructions
are carried out in a predetermined order, the system header being updated
each time an instruction is carried out to provide a new system header.

36. A method as claimed in claim 30, in which, on carrying out the instruction or
20 the last of the instructions, the email is not suitable for sending:

the header is read again;

a new classification is allocated to the email;

25 a new system header is prepared from the new classification and the
routing data; and

then the operations required by the new system header are carried
out.

30 37. A method as claimed in claim 30, in which, on retrieving the instruction from
the classification instruction list-

the instruction is stored in a processors routing database as a queue

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for a processor engine chosen to carry out the operation in response to the instruction;

the processor engine accesses the instruction;

5

the message is retrieved from the mail store database;

the processor engine carries out the operation on the message; and

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the revised system header is returned to the routing database for further routing of the email.

38. A method as claimed in claim 30, in which:-

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there is provided a processor resource database in which is contained all the processor engines for carrying out a particular instruction listed singly and in combination as individual processor engines;

20

a system resource usage is listed for each processor engine;

a processing time for the instruction to be carried out is listed for each processor engine; and

25

on an instruction requiring a specific operation to be carried out for which there is more than one processor engine or more than a number of processor engines capable of carrying out the instruction, the header is read and optimum choice of the processors is made.

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39. A method as claimed in claim 1, in which on receiving an email, the email is classified having regard to those attributes which can be ascertained from the header and the email message itself and if the full attributes of the email cannot be ascertained, an interim classification is allocated to identify the necessary processing requirements to ascertain the attributes of the email, the interim classification is added to the system header, the necessary processing

is carried out having regard to the interim classification, the email is re-classified having regard to the attributes which can now be ascertained from the header and the email and the new classification is added to provide the system header and thus those necessary processing requirements.

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40. A method as claimed in claim 39, in which on an email being received: -

the email is accepted from the mail server;

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the email is copied to a mail store memory;

the email is immediately transmitted in accordance with the header;

15

the method is carried out by retrieving the stored email from the mail store memory and the email is distributed in accordance with the method including substituting, where necessary, this email for the original email transmitted.

41. A method as claimed in claim 39, in which initially there is provided: -

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a classification database comprising a plurality of classifications of emails having regard to their attributes; and

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at least one processing route with suitable processing instructions associated therewith allocated to each classification to provide a classification instruction list.

42. A method as claimed in claim 39, comprising:-

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accepting the email from the mail server in a mail store memory;

allocating the system header;

storing the email message with the system header in at least one

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unique location in a mail store database and then carrying out any necessary processing of the email;

reading the system header;

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retrieving the appropriate instruction from the classification database;

sending an instruction to carry out the operation on the message;

10

retrieving the message from the mail store database;

carrying out the operation on the message;

15

entering a record of the completion of the instruction in the header to provide a revised system header;

storing the email in the mail store; and

20

reading the revised system header and if the email is suitable for sending to the intended recipient, transmitting the email in accordance with the routing data in the system header.

43. A method as claimed in claim 39, in which the classification is chosen from one or more of:-

25

single recipient with no attachment,

single recipient with multiple attachments,

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single recipient with compressed attachments,

single recipient with encrypted attachments,

multiple recipients with no attachments,

multiple recipients with multiple attachments,

multiple recipients with compressed attachments,

5

multiple recipients with encrypted attachments,

the size of the email message,

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the size of any attachments,

known encryption algorithm;

externally originating email;

15

internally originating email, and

urgency marking.

20 44.

A method as claimed in claim 39, in which when the classification allocated to an email requires the carrying out of more than one instruction, the instructions are carried out in a predetermined order, the system header being updated each time an instruction is carried out to provide a new system header.

25 45.

A method as claimed in claim 39, in which, on carrying out the instruction or the last of the instructions, the email is not suitable for sending:

the header is read again;

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a new classification is allocated to the email;

a new system header is prepared from the new classification and the routing data; and

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then the operations required by the new system header are carried out.

46. A method as claimed in claim 39, in which, on retrieving the instruction from the classification instruction list:-

the instruction is stored in a processors routing database as a queue for a processor engine chosen to carry out the operation in response to the instruction;

the processor engine accesses the instruction;

the message is retrieved from the mail store database;

the processor engine carries out the operation on the message; and

the revised system header is returned to the routing database for further routing of the email.

47. A method as claimed in claim 39, in which:-

there is provided a processor resource database in which is contained all the processor engines for carrying out a particular instruction listed singly and in combination as individual processor engines;

a system resource usage is listed for each processor engine;

a processing time for the instruction to be carried out is listed for each processor engine; and

on an instruction requiring a specific operation to be carried out for which there is more than one processor engine or more than a number of processor engines capable of carrying out the instruction, the header is read and optimum choice of the processors is made.

48. A method as claimed in claim 1, in which on receiving an email, the email is classified having regard to those attributes which can be ascertained from the header and the email message itself and if the full attributes of the email cannot be ascertained to provide a full system header:-

5

an interim classification is allocated to identify the necessary processing requirements to ascertain the attributes of the email;

10

the interim classification is added to the system header;

the necessary processing is carried out having regard to the interim classification;

15

the email is re-classified having regard to the attributes which can now be ascertained from the header and the email;

the classification is added to the initial header; and

20

the management rules database is then searched and the system header is provided.

49. A method as claimed in claim 48, in which on an email being received:-

25

the email is accepted from the mail server;

the email is copied to a mail store memory;

the email is immediately transmitted in accordance with the header;

30

the method is carried out by retrieving the stored email from the mail store memory and the email is distributed in accordance with the method including substituting, where necessary, this email for the original email transmitted.

50. A method as claimed in claim 48, in which initially there is provided:-

5 a classification database comprising a plurality of classifications of emails having regard to their attributes; and

at least one processing route with suitable processing instructions associated therewith allocated to each classification to provide a classification instruction list.

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51. A method as claimed in claim 48, comprising:-

accepting the email from the mail server in a mail store memory;

15 allocating the system header;

storing the email message with the system header in at least one unique location in a mail store database and then carrying out any necessary processing of the email;

20

reading the system header;

retrieving the appropriate instruction from the classification database;

25 sending an instruction to carry out the operation on the message;

retrieving the message from the mail store database;

carrying out the operation on the message;

30

entering a record of the completion of the instruction in the header to provide a revised system header;

storing the email in the mail store; and

reading the revised system header and if the email is suitable for sending to the intended recipient, transmitting the email in accordance with the routing data in the system header.

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52. A method as claimed in claim 48, in which initially there is provided:-

a classification database comprising a plurality of classifications of emails having regard to their attributes; and

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at least one processing operation with suitable processing instructions associated therewith allocated to each classification to provide a classification instruction list and in which on retrieving the instruction from the classification instruction list:-

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the instruction is stored in a processors routing database as a queue for a processor engine chosen to carry out the operation in response to the instruction;

20

the processor engine accesses the instruction;

the message is retrieved from the mail store database;

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the processor engine carries out the operation on the message; and

the revised system header is returned to the routing database for further routing of the email.

30 53. A method as claimed in claim 48, in which the classification is chosen from one or more of:-

single recipient with no attachment,

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single recipient with multiple attachments,

single recipient with compressed attachments,

5 single recipient with encrypted attachments,

multiple recipients with no attachments,

multiple recipients with multiple attachments,

10 multiple recipients with compressed attachments,

multiple recipients with encrypted attachments,

15 the size of the email message,

the size of any attachments,

20 known encryption algorithm;

externally originating email;

internally originating email, and

25 urgency marking.

54. A method as claimed in claim 48, when the classification allocated to an email requires the carrying out of more than one instruction, the instructions are carried out in a predetermined order, the system header being updated each
30 time an instruction is carried out to provide a new system header.

55. A method as claimed in claim 48, in which, on carrying out the instruction or the last of the instructions, the email is not suitable for sending:

the header is read again;

a new classification is allocated to the email;

5 a new system header is prepared from the new classification and the routing data; and

then the operations required by the new system header are carried out.

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56. A method as claimed in claim 48, in which, on retrieving the instruction from the classification instruction list:-

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the instruction is stored in a processors routing database as a queue for a processor engine chosen to carry out the operation in response to the instruction;

the processor engine accesses the instruction;

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the message is retrieved from the mail store database;

the processor engine carries out the operation on the message; and

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the revised system header is returned to the routing database for further routing of the email.

57. A method as claimed in claim 48, in which:-

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there is provided a processor resource database in which is contained all the processor engines for carrying out a particular instruction listed singly and in combination as individual processor engines;

a system resource usage is listed for each processor engine;

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a processing time for the instruction to be carried out is listed for each processor engine; and

5 on an instruction requiring a specific operation to be carried out for which there is more than one processor engine or more than a number of processor engines capable of carrying out the instruction, the header is read and optimum choice of the processors is made.

10 58. A method in an email processing assembly having a mail server, processors, processor engines for processing an email into formats suitable for the recipient and storage means associated therewith for the distribution of an email to an intended recipient in a predetermined format suitable for the recipient, the email having a message and an initial header comprising email data comprising: routing data including originating data, address data
15 identifying the intended recipient; constituent data indicating the nature of the email; and content data comprising reference to the components of the email message itself, the email being received in a mail server in which the following steps were carried out, prior to receiving the email, to prepare the processing assembly to carry out the method:-

20 preparing a classification database comprising:-

25 a plurality of classifications of emails having regard to their attributes; and at least one processing operation with suitable processing instructions associated therewith allocated to each classification to provide a classification instruction list for routing the email through the processing engines;

30 storing in the instruction list database the instructions necessary to perform the processing from one format to another format;

storing in a recipients database the formats suitable for each recipient as recipients processing requirements;

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storing in a management rules database data specifying the manner in which the email will be processed and distributed and comprising, on an email being received:-

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taking the initial header;

searching the management rules database;

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retrieving appropriate rules having regard to the initial header;

adding the rules to the initial header to form a system header;

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retrieving the processing requirements for the recipients from the recipients database;

adding the recipients processing requirements to the system header;

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carrying out any necessary processing of the email having regard to the system header by retrieving the instructions from the instructions list database; and

distributing the email having regard to the system header.

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59. A method as claimed in claim 58, in which on receiving the email, the email is classified having regard to those attributes which can be ascertained from the header and the email message itself and the classification is added to the system header to control the manner in which the necessary processing requirements are carried out.

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60. A method as claimed in claim 58, in which on receiving an email, the email is classified having regard to those atXr-2p-e-2p- which can be ascertained from the header and the email message itself and if the full attributes of the email

cannot be ascertained, an interim classification is allocated to identify the necessary processing requirements to ascertain the attributes of the email, the interim classification is added to the system header, the necessary processing is carried out having regard to the interim classification, the email is re-

5 classified having regard to the attributes which can now be ascertained from the header and the email and the new classification is added to provide the system header and thus those necessary processing requirements.

61. A method as claimed in claim 58, in which on receiving an email, the email is

10 classified having regard to those attributes which can be ascertained from the header and the email message itself and if the full attributes of the email cannot be ascertained to provide a full system header:-

an interim classification is allocated to identify the necessary

15 processing requirements to ascertain the attributes of the email;

the interim classification is added to the system header;

the necessary processing is carried out having regard to the interim

20 classification;

the email is re-classified having regard to the attributes which can now be ascertained from the header and the email;

25 the classification is added to the initial header; and

the management rules database is then searched and the system header is provided.

30 62. A method as claimed in claim 58, comprising:-

accepting the email from the mail server in a mail store memory;

allocating the system header;

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storing the email message with the system header in at least one unique location in a mail store database and then carrying out any necessary processing of the email;

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reading the system header;

retrieving the appropriate instruction from the classification database;

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sending an instruction to carry out the operation on the message;

retrieving the message from the mail store database;

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carrying out the operation on the message;

entering a record of the completion of the instruction in the header to provide a revised system header;

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storing the email in the mail store; and

reading the revised system header and if the email is suitable for sending to the intended recipient, transmitting the email in accordance with the routing data in the system header.

25 63. A method as claimed in claim 58, in which the classification is chosen from one or more of:-

single recipient with no attachment,

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single recipient with multiple attachments,

single recipient with compressed attachments,

single recipient with encrypted attachments,

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multiple recipients with no attachments,

multiple recipients with multiple attachments.

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multiple recipients with compressed attachments,

multiple recipients with encrypted attachments,

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the size of the email message,

the size of any attachments,

known encryption algorithm;

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externally originating email;

internally originating email, and

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urgency marking.

64. A method as claimed in claim 58, in which:-

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there is provided a processor resource database in which is contained all the processor engines for carrying out a particular instruction listed singly and in combination as individual processor engines;

a system resource usage is listed for each processor engine;

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a processing time for the instruction to be carried out is listed for each processor engine; and

on an instruction requiring a specific operation to be carried out for which there is more than one processor engine or more than a number

of processor engines capable of carrying out the instruction, the header is read and optimum choice of the processors is made.

65. A method as claimed in claim 58, in which when the classification allocated to an email requires the carrying out of more than one instruction, the instructions are carried out in a predetermined order, the system header being updated each time an instruction is carried out to provide a new system header.

66. A method as claimed in claim 58, in which, on carrying out the instruction or the last of the instructions, the email is not suitable for sending:

the header is read again;

a new classification is allocated to the email;

a new system header is prepared from the new classification and the routing data; and

then the operations required by the new system header are carried out.

67. A method in an email processing assembly having a mail server, processors, processor engines for processing an email into formats suitable for the recipient and storage means associated therewith for the distribution of an email to an intended recipient in a predetermined format suitable for the recipient, the email having a message and an initial header comprising email data comprising: routing data including originating data, address data identifying the intended recipient; constituent data indicating the nature of the email; and content data comprising reference to the components of the email message itself, the email being received in a mail server in which the following steps were carried out, prior to receiving the email, to prepare the processing assembly to carry out the method:-

preparing a classification database comprising:-

a plurality of classifications of emails having regard to their attributes; and at least one processing operation with suitable processing instructions associated therewith allocated to each classification to provide a classification instruction list for routing the email through the processing engines;

5

storing in the instruction list database the instructions necessary to perform the processing from one format to another format;

10

storing in a recipients database the formats suitable for each recipient as recipients processing requirements;

15

storing in a management rules database data specifying the manner in which the email will be processed and distributed

and comprising, on an email being received:-

20

the email is accepted from the mail server;

the email is copied to a mail store memory;

25

the email is immediately transmitted in accordance with the initial header;

retrieving the initial header;

searching the management rules database;

30

retrieving appropriate rules having regard to the initial header;

adding the rules to the initial header to form a system header;

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retrieving the processing requirements for the recipients from the recipients database;

5 adding the recipients processing requirements to the system header;

retrieving the stored email from the mail store memory;

10 carrying out any necessary processing of the email having regard to the system header by retrieving the instructions from the instructions list database; and

15 distributing the email in accordance with the system header including substituting the email where necessary for the originally distributed email.

20 68. A method as claimed in claim 67, in which on receiving the email, the email is classified having regard to those attributes which can be ascertained from the header and the email message itself and the classification is added to the system header to control the manner in which the necessary processing requirements are carried out.

25 69. A method as claimed in claim 67, in which on receiving an email, the email is classified having regard to those attributes which can be ascertained from the header and the email message itself and if the full attributes of the email cannot be ascertained, an interim classification is allocated to identify the necessary processing requirements to ascertain the attributes of the email, the interim classification is added to the system header, the necessary processing is carried out having regard to the interim classification, the email is re-
30 classified having regard to the attributes which can now be ascertained from the header and the email and the new classification is added to provide the system header and thus those necessary processing requirements.

70. A method as claimed in claim 67, in which on receiving an email, the email is

classified having regard to those attributes which can be ascertained from the header and the email message itself and if the full attributes of the email cannot be ascertained to provide a full system header:-

5 an interim classification is allocated to identify the necessary processing requirements to ascertain the attributes of the email;

the interim classification is added to the system header;

10 the necessary processing is carried out having regard to the interim classification;

the email is re-classified having regard to the attributes which can now be ascertained from the header and the email;

15 the classification is added to the initial header; and

the management rules database is then searched and the system header is provided.

20 71. A method as claimed in claim 67, comprising:-

accepting the email from the mail server in a mail store memory;

25 allocating the system header;

storing the email message with the system header in at least one unique location in a mail store database and then carrying out any necessary processing of the email;

30 reading the system header;

retrieving the appropriate instruction from the classification database;

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sending an instruction to carry out the operation on the message;

retrieving the message from the mail store database;

5 carrying out the operation on the message;

entering a record of the completion of the instruction in the header to
provide a revised system header;

10 storing the email in the mail store; and

reading the revised system header and if the email is suitable for
sending to the intended recipient, transmitting the email in accordance
with the routing data in the system header.

15

72. A method as claimed in claim 67, in which the classification is chosen from
one or more of:-

single recipient with no attachment,

20

single recipient with multiple attachments,

single recipient with compressed attachments,

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single recipient with encrypted attachments,

multiple recipients with no attachments,

multiple recipients with multiple attachments,

30

multiple recipients with compressed attachments,

multiple recipients with encrypted attachments,

the size of the email message,

the size of any attachments,

5 known encryption algorithm;

externally originating email;

10 internally originating email, and

urgency marking.

73. A method as claimed in claim 67, in which:-

15 there is provided a processor resource database in which is contained
all the processor engines for carrying out a particular instruction listed
singly and in combination as individual processor engines;

20 a system resource usage is listed for each processor engine;

a processing time for the instruction to be carried out is listed for each
processor engine; and

25 on an instruction requiring a specific operation to be carried out for
which there is more than one processor engine or more than a number
of processor engines capable of carrying out the instruction, the
header is read and optimum choice of the processors is made.

74. A method as claimed in claim 67, in which when the classification allocated to
30 an email requires the carrying out of more than one instruction, the instructions
are carried out in a predetermined order, the system header being updated
each time an instruction is carried out to provide a new system header.

75. A method as claimed in claim 67, in which, on carrying out the instruction or

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the last of the instructions, the email is not suitable for sending;

the header is read again;

5 a new classification is allocated to the email;

a new system header is prepared from the new classification and the routing data; and

10 then the operations required by the new system header are carried out.

76. A processing system for the reception and transmittal of an email between a sender and recipient, the email comprising a message including one or more components and an initial header attached thereto, the initial header comprising email data comprising: routing data including originating data, address data identifying the intended recipient; constituent data indicating the nature of the email; and content data comprising reference to the components of the email message itself, the system comprising:-

20 a mail server capable of receiving and transmitting emails;

a plurality of processors each comprising a processor engine having means for identifying the format of a message component and for converting the format of a message component from at least one format to another;

25 a mail store memory for storage of an email message from the mail server;

30 a recipients database;

means for storing in the recipients database the formats suitable for each recipient as recipient processing requirements;

means for allocating a classification to an email having regard to the attributes of the email as obtained from its routing data, constituent data and content data;

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means for storing in a classifications database the classifications;

means for allocating to each classification a routing through at least one processor means for adding recipient processing requirements to the initial header;

10

means for adding the classification to the header;

a management rules database;

15

means for storing in the management rules database management data specifying the manner in which the email will be processed and distributed;

20

means for adding the management data to the header; and

a router for delivering the header to one of the processors in response to the system header for delivering the email message between the mail store memory and the processor and for altering the header in response to the processing carried out by each processor.

25

77. A system as claimed in claim 76, in which the mail store memory comprises a separate store having a unique location for each attachment.

30 78. A system as claimed in claim 76, in which each processor is a separate stand alone processor connected only to the router and in which there is provided: -

a database to store headers for forming a queue for each processor;

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means to retrieve a component from the mail store memory for processing and to return the processed component to the mail store memory;

5 means to enter into the header confirmation of the processing; and

means to return the updated header to the router.

10 79. A system as claimed in claim 76, in which one of the processors is a profile controller and associated database for the reception of management data, the profile controller being connected to the router to alter the header in response to the information in the management rules database.

15 80. A system as claimed in claim 76, in which the processor comprises a processor operated by a third party and the router includes means to establish a communications link with the processor.

20 81. A system as claimed in claim 76, in which there is provided a processor engine database in which there is listed the processor engines available for carrying out a particular processing operation both singly and in combination together with its system resource usage and means for allocating a processor engine or processor engines to carry out the particular operation having regard to the information in the database.

25 82. A computer program comprising program instructions for causing one or more computers carry out the method as claimed in claim 1.

30 83. A computer program comprising program instructions for causing one or more computers carry out the method as claimed in claim 2.

84. A computer program comprising program instructions for causing one or more computers carry out the method as claimed in claim 16.

85. A computer program comprising program instructions for causing one or more

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computers carry out the method as claimed in claim 30.

86. A computer program comprising program instructions for causing one or more computers carry out the method as claimed in claim 39.

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87. A computer program comprising program instructions for causing one or more computers carry out the method as claimed in claim 48.

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88. A computer program comprising program instructions for causing one or more computers carry out the method as claimed in claim 58.

89. A computer program comprising program instructions for causing one or more computers carry out the method as claimed in claim 67.

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